Texas Department of Health
Zoonosis Control Division
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Austin, Texas 78756

1998 Severe Animal Attack and Bite Surveillance Summary

Introduction

During 1998, a total of 704 severe animal attacks or bites were voluntarily reported to the Zoonosis Control Division of the Texas Department of Health by local health departments, law enforcement agencies, animal control agencies, and emergency health care providers. Reports were submitted from 93 of Texas' 254 counties (Figure 1). A "severe attack" is defined as one in which the animal repeatedly bites or vigorously shakes its human victim, and the victim, or a person intervening, has extreme difficulty terminating the attack. A "severe bite" is defined as a puncture or laceration made by an animal's teeth which breaks the person's skin, resulting in a degree of trauma which would cause most prudent and reasonable people to seek medical care for treatment of the wound, without consideration of rabies prevention alone. A review of death certificates for the entire state for 1998 revealed that there were no deaths associated with severe animal attacks.

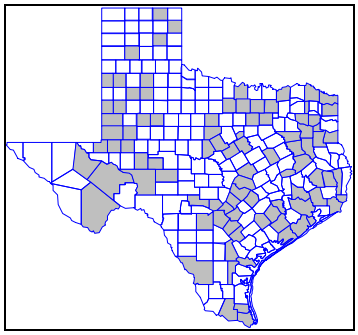

Figure 1. Texas counties from which reports of severe animal attacks or bites were received - 1998.

Species

The species of the animal involved in severe animal attacks or bites was identified in 699 of the 704 cases (99.3%). Domestic dogs and cats accounted for 96.6% of all reported serious attacks (Figure 2). The overwhelming majority (625 cases, 89.4%) involved domestic dogs, while domestic cats were involved in 55 cases (7.8%). The other species identified were: wolf-dog hybrid (5 reports, 0.7%); squirrel (4 reports, 0.6%); raccoon (3 reports, 0.4%); bat, horse, and hamster (2 reports each, 0.3% each); and gorilla, rat, and wolf (1 report each, 0.1% each).

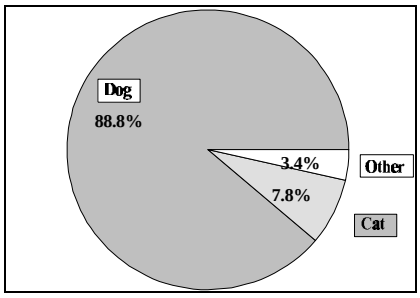

Figure 2. Species involved in severe animal attacks or bites - 1998

Canine Breed

The specific breed of canine (domestic dog and wolf-dog hybrids) was listed in 587 reports. Of the 85 breeds and breed crosses reported, 8 breeds and breed crosses constituted 47.9% of the reports (Table 1). (Note: the number of animals in various dog breeds in the overall canine population is unknown; therefore, no conclusions can be drawn concerning whether dogs of these 8 breeds are prone to bite more often than other breeds or if these are merely the more popular breeds.) No other breeds or breed crosses represented more than 3% of the reports. Small breeds of dogs were infrequently reported because they are less likely than large breeds to inflict severe wounds.

Breed	Number	%
Chow	49	8.3
Rottweiler	48	8.2
Pit Bull	42	7.2
German Shepherd	36	6.1
Chow Cross	33	5.6
Labrador Retriever	29	4.9
German Shepherd Cross	23	3.9
Mixed Breed	22	3.7

Table 1. Canine breeds reported in severe animal attacks or bites - 1998

Animal's Sex

In severe animal attacks or bites involving canines (domestic dogs and wolf-dog hybrids), the animal's sex was specified in 554 reports. Of the 94 female canines whose reproductive status was specified, 73 (77.7%) were intact and 21 (22.3%) were spayed. Of the 269 male canines whose reproductive status was known, 242 (90.0%) were intact and 27 (10.0%) were castrated (Figure 3). Of all dogs reported in severe attacks and where sex and reproductive status was known, intact males were 2.6 times more likely to be involved than females or castrated males.

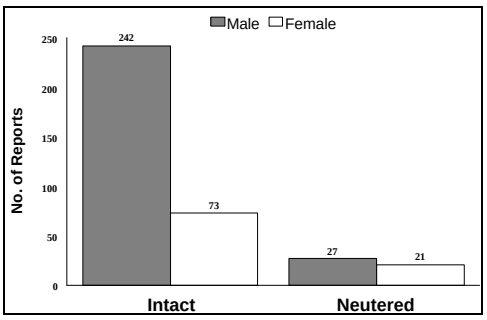

Figure 3. Sex of canines involved in severe animal attacks or bites - 1998

While the exact proportion of sterilized versus intact animals in the overall canine population in Texas is unknown, a study conducted by the Zoonosis Control Division of the Texas Department of Health surveyed the reproductive status of almost 25,000 dogs. This sample was drawn both from dogs which were licensed and dogs which were impounded in animal shelters. The study revealed that 2,788 (23%) of male dogs and 3,756 (31%) of female dogs in the sample had been surgically sterilized. When comparing the sex and reproductive status of dogs involved in severe bites with the study population, the following conclusions may be made. Spayed and intact females appear to bite in the same proportion as their prevalence in the overall population. Neutering males appears to reduce the risk of serious attacks or bites by more than 2.5 times. These findings suggest that male hormones may play a significant role in serious canine attacks or bites.

Animal's Behavior

The animal's behavior prior to the attack was listed in 527 reports. The animal was described as docile or friendly in 316 cases (60.0%). In 229 reports, the animal displayed warning signals (such as barking, growling, hissing, curling lip, or baring teeth) prior to the attack. Of the 644 reports stating whether multiple animals were involved, 76 (11.8%) incidents involved an attacking animal that was part of a larger group of animals while in 568 (88.2%) incidents, the animal acted alone.

Rabies Vaccination Status

The animal's rabies vaccination status was specified in approximately two-thirds (491) of reports involving canines (domestic dogs and wolf-dog hybrids) or domestic cats. Of these, 239 (48.7%) had not received a rabies vaccination within the past 12 months, and 252 (51.3%) were currently vaccinated. Over one-quarter of all reports involving canines or domestic cats did not specify whether the animal was vaccinated (Figure 4).

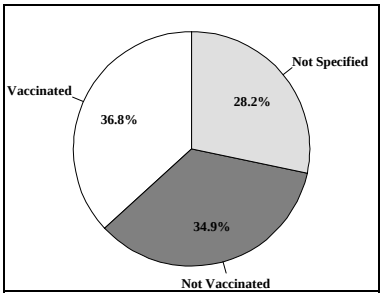

Figure 4. Rabies vaccination status of canines and domestic cats involved in severe animal attacks or bites - 1998

Animal Involved in Previous Attack

Of the 407 reports in which it was definitely known whether or not the animal was involved in previous severe attacks or bites on people or animals, 316 (77.6%) had not been involved in previous attacks and 91 (22.4%) had been involved in previous attacks. Of the 75 reports that included information on whether the previous attacks were against people or animals, 63 animals had been involved in attacks against people, 9 had been involved in attacks against other animals, and 3 had been involved in attacks against both people and animals.

Provocation/Special Circumstances

Circumstances described in 267 (37.9%) reports included situations in which the attack could be considered provoked. No association was found between the victim's age and whether the attack was provoked. Special circumstances involved in the attacks included (in order of frequency) guarding, dog fight, being startled, hunger/eating, teasing, puppies/kittens, injury, and estrus.

Extent of Injury

Of the 286 reports in which the extent of injury was specified, 44 (15.4%) attack victims required surgery, 79 (27.6%) required hospitalization, and 214 (74.8%) required sutures.

When reports were reviewed in which the victim was hospitalized and the breed of canine (domestic dog and wolf-dog hybrid) was known, 27 dog breeds or breed crosses were included in 62 reports. Of these, 5 breeds and breed crosses were involved in 29 (48.6%) attacks (Table 2). No other single breed or breed cross represented more than 4% of the reports.

Breed	Number	%
Pit Bull	8	13.1
Rottweiler	7	11.5
Chow	6	9.8
German Shepherd	4	6.6
Chow Cross	4	6.6
All Others	32	52.4

Table 2. Dog breeds involved in severe attacks or bites in which the victim was hospitalized - 1998

Victim's Sex and Age

In the 701 records that specified the victim's sex, 381 victims (54.4%) were males and 320 victims were females (45.6%). These percentages remained relatively constant over the entire age range of the victims. The victim's age was listed on 684 records; children less than 11 years of age represented 42.4% of these victims (Table 3). The mean age was 23.2 years, the median was 13.0 years, and the mode was 4.0 years (Figure 5). When considering the overall population of Texas, children less than 11 years of age were 3.5 times more likely than the remainder of the population to be a victim of a severe animal attack.

Age Group	Number	%
<6	134	19.6
6-10	156	22.8
11-19	113	16.5
20-59	225	32.9
>59	56	8.2

Table 3. Age of victims of severe animal attacks or bites - 1998

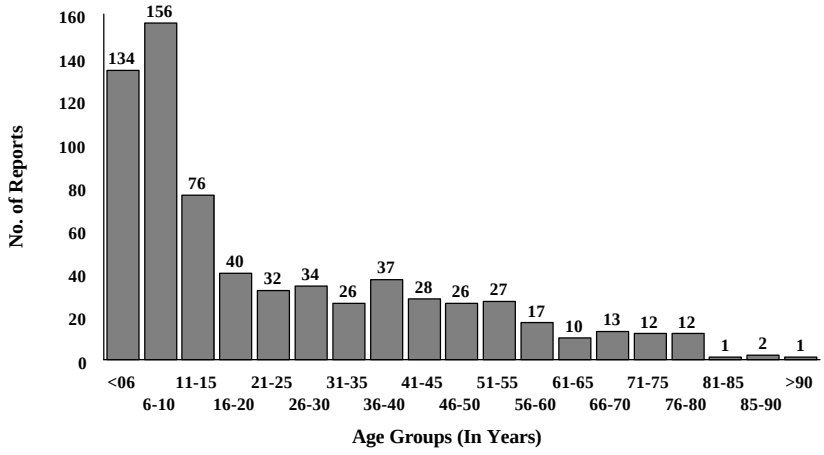

Figure 5. Age groups of victims of severe animal attacks or bites - 1998

Anatomic Location of Injury

Many of the attack victims received wounds at multiple anatomic locations. Of the 698 reports that specified the site of injury, the following sites were listed:

238 (34.1%) involved the legs
177 (25.4%) involved the head
168 (24.1%) involved the hands
165 (23.6%) involved the arms
67 (9.6%) involved the torso
19 (2.7%) involved the neck
18 (2.6%) involved the feet

When the site of injury is compared to age, the percent experiencing trauma to the head decreases significantly as the victim's age (and presumably height) increases (Table 4). Children less than 11 years of age were victims in 42.4% of the severe attacks, yet sustained 75% of all head injuries (Figure 6).

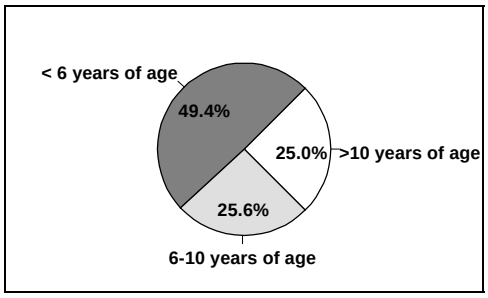

Figure 6. Age of victim receiving head trauma due to a severe animal attack or bite - 1998

Age	Number with head trauma	% of age group with head trauma	% of head trauma, all groups
< 6	87	64.9	49.4
6-10	45	29.0	25.6
>10	44	11.3	25.0

Table 4. Age of severe attack or bite victim receiving head trauma - 1998

High Risk Occupation

Forty reports included victims who were engaged in what would typically be considered a high risk occupation or hobby for animal bites, including:

Animal control officer	8	Animal trainer/breeder	1	Inmate *	1
Utility worker	8	Campaigning for office	1	Locksmith	1
Home health aid	4	Census worker	1	Red Cross volunteer	1
Veterinary assistant	4	Construction worker	1	Thief	1
Law enforcement officer	3	Family service employee	1	Zookeeper	1
Delivery person	2	Horse trainer	1		

***** The inmate was assigned animal control officer duties and was therefore high risk.

Charges Filed

Of the 685 reports involving canines (domestic dogs and wolf-dog hybrids) and domestic cats, charges were filed against the animal's owner in 46 (6.8%) reports. Nine reports contained multiple violations. The violations were as follows:

Number of reports	Violation
25	animal-at-large
14	failure to vaccinate against rabies
11	dangerous/vicious dog
5	failure to license

Recommendations

A review of the surveillance data can help formulate prevention strategies. As with many other public health efforts, education and legislation are two key components in reducing the frequency of animal bites.

Education

- Develop educational efforts through humane organizations, animal control agencies, schools, family care practitioners, veterinarians, and parents.
- Teach children to understand basic canine behavior and to avoid circumstances that may evoke an angry response from a dog.
- Inform dog owners that through their interaction with their pets, they can reduce the likelihood of owning an animal that will bite. Lack of socialization, improper training, abuse, and failure to observe early signs of aggression all contribute to a dog attack.
- Avoid breeds that have a reputation for being unpredictable or aggressive particularly if families with children acquire a pet.
- Educate obstetricians and pediatricians to advise parents to never leave infants and toddlers unsupervised around any dog, even the family pet, regardless of how friendly the dog may appear. Lavish extra attention on the family dog when a new baby is brought into the home so the pet does not feel "jealous" or that its position in the family is being threatened.
- Through the efforts of veterinarians, promote surgical sterilization for safety reasons as well as the health benefits to the animal and prevention of pet overpopulation.

Legislation

- Although reports indicated that approximately 37% of the biting dogs and cats were not currently vaccinated against rabies, citations were issued in only 7% of the cases (despite a state law, Chapter 826 of the Texas Health and Safety Code, that mandates that failure to vaccinate dogs and cats annually is a Class C misdemeanor). Increase enforcement of this law and existing local leash laws to provide incentives for dog owners to act responsibly.
- Where community laws are lacking, enact and enforce local leash and nuisance laws.

- Develop local ordinances to offer incentives (such as decreased licensing fees) for owners whose dogs complete a dog obedience class.

- Have local law enforcement agencies enforce the Texas Dangerous Dog Act (Chapter 822 of the Texas Health and Safety Code), which is designed to minimize human exposure to dogs deemed to be dangerous.

- Encourage reporting of all bites to the Local Rabies Control Authority (as mandated by Chapter 826 of the Texas Health and Safety Code). Reported rates influence public health policies in such matters as leash laws, impoundment of strays, amount of money allocated for animal control, and rabies vaccination programs for both pets and people.

- Chapter 828 of the Texas Health and Safety Code requires either surgical sterilization or a voucher for sterilization of all animals adopted from animal shelters in cities with populations greater than 10,000 and counties with populations greater than 20,000. Make efforts locally to actually sterilize the animal rather than issue the owner a voucher to be used for sterilization because redemption of sterilization vouchers tends to be low.